



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/865,219	05/25/2001	Takashi Saito	14653	2617
23389	7590	09/29/2004	EXAMINER	
SCULLY SCOTT MURPHY & PRESSER, PC 400 GARDEN CITY PLAZA GARDEN CITY, NY 11530			LIEN, TAN	
			ART UNIT	PAPER NUMBER
			2141	

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/865,219	Applicant(s) SAITO, TAKASHI	
	Examiner Tan Lien	Art Unit 2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/25/2001</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTIONS

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

The disclosure is objected to because of the following informalities:

On page 4, lines 12, "FIG. 5" should be "FIG. 2" since it is describing FIG. 2.

Appropriate correction is required.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

Claims 11 and 12 are identical duplicates of claims 6 and 7 respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent 5,999,534) in view of Ikeda et al (US Patent 6,711,167).

Claim(s) 1: Kim teaches a scheduling circuit comprising:

a plurality of cell FIFOs to each of which the ATM cells output from a corresponding data are written (col. 4, lines 60-65); and

an ATM scheduling section for scheduling the ATM cells received from each of said cell FIFOs cell by cell (Abstract).

Kim, however, fails to teach an IP (Internet Protocol) scheduling/format converting section for scheduling input IP packets and converting each of said IP packets to ATM (Asynchronous Transfer Mode) cells, said IP scheduling/format converting section including a plurality of packet FIFOs (First-In First-out memories).

Ikeda, in an analogous art, teaches caching the input IP packets in an input FIFO buffer and converting the IP packet to ATM cells in the Segmentation and Reassembly module. It would be obvious to one of ordinary skill in the art at the time of the invention to combine Kim's ATM cell scheduling section with Ikeda's IP packet scheduling section, for the advantage of elevating the throughput from the receipt of the IP packet to the output of the ATM cells (col. 4, lines 57-61 Ikeda).

Claim(s) 2: Kim and Ikeda teach the scheduling circuit of claim 1, wherein

said ATM scheduling section calculates, while scheduling a given cell belonging to a given VCI (Virtual Channel Identifier), a logical transmission time (col. 3, lines 37-43 of Kim) for a next cell belonging to said VCI (col. 2, lines 28-32 of Kim) and sends, if said next cell cannot be scheduled, an input inhibition signal (col. 2, lines 58-63 of Kim; wherein the empty flag is the input inhibition signal to one of the priority queues) to one of said plurality of cell FIFOs that has output said given cell.

Claim(s) 3, 8: Kim and Ikeda teach the scheduling circuit of claims 2, 1, wherein

when any one of said plurality of packet FIFOs overflows, said IP scheduling/format converting section discards an entire packet (It would be obvious and well known to one of ordinary skill in the art at time of the invention to come up with discarding the entire packet when the FIFOs overflows. There is not much else the scheduling circuit can do but to discard the entire packet).

Claim(s) 4, 6: Kim and Ikeda teach the scheduling circuit of claims 3, 1, wherein

said ATM scheduling section comprises a VCI identifying circuit for identifying the VCI of each ATM cell by referencing a header attached to said ATM cell (col. 2, lines 28-32 of Kim).

Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Ikeda and Kamiya (US Patent 6,704,321).

Claim(s) 5, 7: Kim and Ikeda teach the scheduling circuit of claim 4, 6, but fail to teach the ATM scheduling section further comprises:

a logical transmission time memory for managing VCI numbers on the basis of a period of time; a current time counter for outputting a current time; a comparing/updating circuit for comparing the current time of an arrived cell and the logical transmission time; a transmission time determining circuit for determining a transmission time of the cell; and a conflict control memory for sending, in response to an output of said VCI identifying circuit, the ATM cell scheduled in accordance with the current time output from said current time counter and the transmission time determined by said transmission time determining circuit.

Kamiya, in an analogous art, teaches an ATM scheduling section comprising:

a logical transmission time memory for managing VCI numbers on the basis of a period of time (col. 5, lines 2-4);
a current time counter for outputting a current time (col. 6, lines 3-5);
a comparing/updating circuit for comparing the current time of an arrived cell and the logical transmission time (col. 6, lines 3-12);
a transmission time determining circuit for determining a transmission time of the cell (col. 5, lines 2-4); and

Art Unit: 2141

a conflict control memory for sending, in response to an output of said VCI identifying circuit, the ATM cell scheduled in accordance with the current time output from said current time counter and the transmission time determined by said transmission time determining circuit (col. 5, lines 9-14).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Kim's and Ikeda's scheduling circuit with Kamiya's ATM scheduling circuit or traffic shaper, for the advantage of improving the coefficient of utilization of network resource and quality of service of the virtual connections (col. 2, lines 40-45).

Claim(s) 11: This claim is identical to claim 6, and therefore is rejected on the same basis as claim 6.

Claim(s) 12: This claim is identical to claim 7, and therefore is rejected on the same basis as claim 7.

Conclusion

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Tan Lien whose telephone number is (703) 305-6018. The examiner can normally be reached on Monday-Thursday from 8:30am to 6pm. The examiner can also be reached on alternate Fridays.

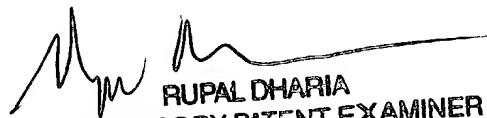
Art Unit: 2141

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached at (703) 305-4003. The fax phone number for this Group is (703) 305-3718.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [tan.lien@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.



RUPAL DHARIA
SUPERVISORY PATENT EXAMINER